

persons of ordinary skill in the art. The invention is intended to embrace all such modifications and variations as fall within the spirit and broad scope of the appended claims.

CLAIMS

1.

A child-resistant closure and container package that comprises:

a container having an open end surrounded by a cylindrical wall with a central axis, a plurality of circumferentially spaced projections extending radially outwardly from an outer surface of said wall adjacent to said open end, notches on undersides of said projections, and a plurality of circumferentially spaced flexible resilient spring elements extending radially outwardly from said outer surface of said wall and angularly disposed between said projections, and

a closure that includes a base wall, a cylindrical skirt extending from said base wall to an axial edge spaced from said base wall, a plurality of circumferentially spaced lugs extending radially inwardly from said skirt, and a circumferentially continuous annular wall extending axially from said base wall coaxially with and spaced radially inwardly from said skirt, said axial edge of said skirt being adapted for axial edge abutment with said spring elements to urge said lugs axially into said notches with said annular wall being in internal plug-sealing engagement with said open end of said container, removal of said closure requiring axial movement of said closure against said spring elements and rotation of said closure to move said lugs out of said notches.

2.

The package set forth in claim 1 wherein said closure further comprises a second annular wall extending from said base wall axially opposite said skirt, said second annular wall

3 having a circumferential bead for securing said closure to said open end of said container in a
4 non-child-resistant mode of operation.

3.

1 The package set forth in claim 2 wherein said circumferential bead extends
2 radially outwardly from said second annular wall for internal engagement with said cylindrical
3 wall within said open end.

4.

1 The package set forth in claim 1 wherein said spring elements lie in a plane
2 perpendicular to said axis and disposed on an opposite side of said projections from said open
3 end of said container.

5.

1 A closure and container package having child-resistant and non-child-resistant
2 modes of operation, which comprises:

3 a container having an open end surrounded by a cylindrical wall with a central
4 axis, a plurality of circumferentially spaced projections extending radially outwardly from an
5 outer surface of said wall adjacent to said open end, notches on undersides of said projections,
6 a plurality of circumferentially spaced flexible resilient flat spring elements extending radially
7 outwardly from said outer surface of said wall in a plane perpendicular to said axis on an
8 opposite side of said projections from said open end and angularly disposed between said
9 projections, and an internal bead around said open end, and

10 a closure including a base wall, a cylindrical skirt extending from a peripheral
11 edge of said base wall to an axial edge spaced from said base wall, a plurality of circumferentially

12 spaced lugs extending radially inwardly from said skirt, a hollow dome extending axially from
13 said base wall in a direction opposite from said skirt, said dome having an annular sidewall
14 spaced radially inwardly from said peripheral edge of said base wall, a bead extending radially
15 outwardly from said annular wall at a position spaced from said base wall, and a
16 circumferentially continuous annular wall extending axially from said base wall coaxially with
17 and spaced radially inwardly from said skirt,

18 said closure being adapted to be secured to said container in a child-resistant mode
19 of operation with said axial edge of said skirt in axial edge engagement with said spring elements
20 to urge said lugs axially into said notches and with said annular wall in internal plug-sealing
21 engagement with said open end of said container,

22 said closure being adapted to be secured to said container in a non-child-resistant
23 mode of operation with said dome received within said open end and said bead on said annular
24 sidewall received by snap fit over said internal bead on said cylindrical wall.

6.

1 The package set forth in claim 5 wherein said beads on said container and closure
2 are circumferentially continuous.

7.

1 The package set forth in claim 6 wherein said bead on said closure lies in a plane
2 parallel to said base wall.

8.

1 The package set forth in claim 7 wherein said beads are rounded in profile.

9.

1 The package set forth in claim 8 wherein spacing between said bead and said base
2 wall on said closure, and between said bead and said end of said container, are such that snap-fit
3 of said bead on said closure over said bead on said container brings said base wall into abutting
4 engagement with said end of said container.

10.

1 A closure of one-piece plastic construction that includes a base wall, a cylindrical
2 skirt extending from a peripheral edge of said base wall to an axial edge spaced from said base
3 wall, a plurality of circumferentially spaced lugs extending radially inwardly from said skirt, a
4 hollow dome extending axially from said base wall in a direction opposite from said skirt, said
5 dome having an annular sidewall spaced radially inwardly from said peripheral edge of said base
6 wall, a bead extending radially outwardly from said annular wall at a position spaced from said
7 base wall, and a circumferentially continuous annular wall extending axially from said base wall
8 coaxially with and spaced radially inwardly from said skirt.

11.

1 A closure of one-piece plastic construction that includes a base wall, a cylindrical
2 skirt extending from said base wall to an axial edge spaced from said base wall, a plurality of
3 circumferentially spaced lugs extending radially inwardly from said skirt, and a circumferentially
4 continuous annular wall extending axially from said base wall coaxially with and spaced radially
5 inwardly from said skirt.

12.

1 The closure set forth in claim 11 wherein said closure further comprises a second
2 annular wall extending from said base wall axially opposite said skirt, said second annular wall
3 having a circumferential bead for securing said closure to said open end of said container in a
4 non-child-resistant mode of operation.

13.

1 A container of one-piece plastic construction having an open end surrounded by
2 a cylindrical wall with a central axis, a plurality of circumferentially spaced projections extending
3 radially outwardly from an outer surface of said wall adjacent to said open end, notches on
4 undersides of said projections, and a plurality of circumferentially spaced flexible resilient spring
5 elements extending radially outwardly from said outer surface of said wall and angularly
6 disposed between said projections.

14.

1 The container set forth in claim 13 wherein said spring elements are flat and lie
2 in a plane perpendicular to said axis and disposed on an opposite side of said projections from
3 said open end of said container.

15.

1 A container of one-piece plastic construction having an open end surrounded by
2 a cylindrical wall with a central axis, a plurality of circumferentially spaced projections extending
3 radially outwardly from an outer surface of said wall adjacent to said open end, notches on
4 undersides of said projections, a plurality of circumferentially spaced flexible resilient flat spring
5 elements extending radially outwardly from said outer surface of said wall in a plane
6 perpendicular to said axis on an opposite end of said projections from said open end and
7 angularly disposed between said projections, and an internal bead around said open end.

16.

1 A method of making a closure and container package that comprises:

2 (a) providing a container having an open end surrounded by a cylindrical wall
3 with a central axis, a plurality of circumferentially spaced projections extending radially
4 outwardly from an outer surface of said wall adjacent to said open end, notches on undersides
5 of said projections, and a plurality of circumferentially spaced flexible resilient spring elements
6 extending radially outwardly from said outer surface of said wall and angularly disposed between
7 said projections,

8 (b) providing a closure that includes a base wall, a cylindrical skirt extending
9 from said base wall to an axial edge spaced from said base wall, a plurality of circumferentially
10 spaced lugs extending radially inwardly from said skirt, and a circumferentially continuous
11 annular wall extending axially from said base wall coaxially with and spaced radially inwardly
12 from said skirt, and

13 (c) assembling said closure to said container by engaging said axial edge of
14 said skirt against said spring elements and rotating said closure until said lugs engage said
15 notches on said undersides of said projections.